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M. J. JOHNSON, Esq. President, in the Chair.

John Cockle, Esq. M.D., 107 Guildford Street, Russell Square,
was balloted for and duly elected a Fellow of the Society.

Account of Recent Astronomical Operations in Russia.

(*Extract of a Letter from M. Otto Struve to the Astronomer Royal, dated
Oct. 21, 1855.*)

“When I last wrote you, I said that galvanic telegraphy was quite in its infancy in Russia. Since then the war has prompted that affair in a rapid manner. At this moment we have already in Russia about 6000 miles, or even more, of galvanic wires, and are on one side through Warsaw and Cracow; on the other side, through Königsberg, in connexion with the foreign lines. But to make use of these lines for scientific purposes will hardly be possible before the close of the war, for at present all the lines are continually used for official despatches. Only one short line has served for scientific objects,—this is the line of Petersburg to Cronstadt, by which I have to transmit regularly exact Pulkowa time to that part for the purpose of regulating the rates of the chronometers of our navy. This is a small part of the duties devolved upon me by a new appointment as Consultative Astronomer to the Admiralty, in the same manner as I was already since 1848 engaged with the Imperial General Staff. By this supplementary appointment, the geographical part of my sphere of activity has considerably increased, and consequently I am yet more limited than before in the pure scientific astronomical pursuits.

“It is really remarkable that the war until now has not exercised the least influence on the progress of any scientific pursuit for which the support of government is wanted. On the contrary, the energy elicited by the state of war in one principal direction has given rise also to a development of energy in many other respects. This will be proved in part by a short enumeration of the principal geographical undertakings, in the arrangement or direction of which we had to take a part this year. First started from here a numerous party, under the direction of Mr. Schwarz, for the exploration of Eastern Siberia; another party was sent to the Steppes of the Kirghis; a third, under personal direction of Döllén, had to fix the exact geographical positions of a large number of points situated in or near the Ural Mountains, to form a base for the construction of an exact topographical map of the vast districts of mines in that part of Russia; a fourth

expedition, provided with forty chronometers, has to join, first, Moscow with Saratow; and then, this latter town with Astrachan; and, finally, the great trigonometrical operations in the southern part of Russia and in the Transcaucasian provinces are carried on without the least interruption. From the last-mentioned circumstance you will conclude that on our part both the astronomical and the geodetical part of a great arc of parallel will be finished in a very short time.

“In my astronomical pursuits the parallaxes of fixed stars have taken a prominent part during the last year, and I think I have made a considerable progress in these researches. Now that the methods of observations are entirely fixed, I am quite sure that if there is a difference of parallax of $0''.1$ between any couple of stars situated at a distance less than $5'$ from another, four observations made at the epochs of maxima and minima will be entirely sufficient to prove its existence and to define its amount within very narrow limits. I have not yet calculated exactly other parallaxes besides those of α *Lyræ* and δ *Cygni*, the general results of which are known to you, but a short review of my observations shows that μ *Cassiopeiæ* has a parallax of more than $0''.3$, η *Cassiopeiæ* of more than $0''.2$, and *Capella* of between $0''.1$ and $0''.2$. For all these cases, the results obtained by the angles of position agree remarkably with those furnished by the distances.

“The observations of other stars, namely, of α *Tauri*, α *Aquilæ*, α *Andromedæ*, and α *Cassiopeiæ*, are about to be closed; but to guard me against any preoccupation, not even the first step has been made for the reduction of these observations.”

The Positions of 20 Polar Stars, as determined at Redhill.

By R. C. Carrington, Esq.

In the belief that the publication of the positions of an increased number of polar stars suitable for the determination of the meridian error and polar-point circle-reading of a meridian instrument, may be of general utility, I somewhat anticipate the future appearance of the catalogue I have in progress, and give at once the values I now possess, and am satisfactorily applying at Redhill.

The places here given are the result of a careful discussion of 612 observations taken (simultaneously in each element) between the months of December 1853 and April 1855 inclusive. Of these, the older established stars α , δ and λ *Ursæ Minoris*, and γ *Cephei*, appropriate 326, leaving 286 observations to the remaining 16, the numbers of observations of which individually range from 9 to 28. The constants used in their reduction are those given by Peters in his *Num. Const. Nut.* Terms of the second order were omitted, but the small terms which have for argument twice the moon's longitude, were applied throughout. The epoch is the instant at which the sun's mean longitude was 280° near the beginning of the year 1855.